

Clean Copy of Claims

1. An ink comprising about 30-90% ethanol-water vehicle, about 2-20% dispersant resin solublized by ammonium hydroxide, a component selected from about 2-9% translucent acrylate emulsion or about 2-5% hyperdispersant, about 1-12% pigment and 0.5-5% defoamer, wherein the ink has a conductivity from about 2800-9800 $\mu\text{S}/\text{cm}$.
2. The ink according to claim 1, wherein the dispersant resin is a styrene acrylate copolymer.
3. The ink according to claim 1, wherein the pigment is carbon black powder.
4. The ink according to claim 1, wherein the translucent acrylate emulsion contains 40-50% polymer.
5. The ink according to claim 1 further comprising a surfactant, a biocide, additional hyperdispersant or a humectant.
6. The ink according to claim 1, having a pH from about 7.2 to about 7.85.
7. The ink according to claim 1, having a viscosity from about 2.5 to about 2.8 centipoise.
9. The ink according to claim 1, having a particle size of about 128-450 nm, and showing an increase of about 10-15 nm from the dry pigment particles.
10. The ink according to claim 1, having a an equilibrium surface tension of about 25-42 mN/m.

Clean Copy of Claims (cont.)

11. The ink according to claim 1, comprising about 50-60% ethanol-water vehicle, about 8-9% dispersant resin solublized by ammonium hydroxide, about 5% translucent acrylate emulsion or about 3-3.5% hyperdispersant, about 5-9% pigment and about 0.8-1.1% defoamer.

12. The ink according to claim 11 further comprising about 1.5-2% humectant, an additional about 1-1.5% hyperdispersant, about 0.1-2.5% surfactant or about 0.3-0.4% biocide.

13. An ink having a conductivity from about 2800-9800 $\mu\text{S}/\text{cm}$, a particle size of about 128-450 nm, and showing an increase of about 10-15 nm from the dry pigment particles and an equilibrium surface tension of about 25-42 mN/m, wherein the ink comprises about 1-12% pigment and about 2-20% dispersant resin solublized by ammonium hydroxide.

14. The ink according to claim 13 comprising about 30-90% water-EtOH vehicle.

15. The ink according to claim 13 wherein the conductivity is about 5500-6000 $\mu\text{S}/\text{cm}$, the particle size is about 280-300 nm, the equilibrium surface tension is about 36 mN/m, and comprising about 8-9% dispersant resin solublized by ammonium hydroxide.

16. The ink according to claim 15 further comprising about 5-9% pigment and water-EtOH vehicle.

Clean Copy of Claims (cont.)

17. The ink according to claim 16, wherein the dispersant resin is a styrene acrylate copolymer, the pigment is carbon black powder, the pH is about 7.2-7.85, the viscosity is about 2.5-2.8, and further comprising 2-9% translucent acrylate emulsion containing about 40-50% polymer, and an optional ingredient selected from surfactant, biocide, hyperdispersant or humectant.

18. A method of printing comprising the steps of (a) applying to a substrate an ink-jet ink comprising ethanol-water vehicle and about 2-20% dispersant resin solublized by ammonium hydroxide, about 2-9% translucent acrylate emulsion or about 2-5% hyperdispersant, about 1-12% pigment and about 0.5-5% defoamer; and (b) volatilizing the ammonia to fix the ink to the substrate.

19. The method according to claim 18, wherein the ink comprises ethanol-water vehicle and about 8-9% dispersant resin solublized by ammonium hydroxide, about 5% translucent acrylate emulsion or about 3-3.5% hyperdispersant, about 5-9% pigment and about 0.8-1.1% defoamer.

20. The method according to claim 18, wherein the ink has a conductivity from about 2800-9800 $\mu\text{S}/\text{cm}$, a particle size of about 128-450 nm, and showing an increase of about 10-15 nm from the dry pigment particles and an equilibrium surface tension of about 25-42 mN/m.

Clean Copy of Claims (cont.)

21. The method according to claim 18, wherein the ink has a conductivity from about 5550-6000 $\mu\text{S}/\text{cm}$, a particle size of about 280-300 nm, and showing an increase of about 10-15 nm from the dry pigment particles and an equilibrium surface tension of about 36 mN/m.